

Allowed and Allowable Claims

At page 2 of the office action the Examiner indicates that claim 9 is allowed. Applicants have rewritten claims 10-13 to restore them to dependency from allowed claim 9. Applicants request immediate allowance of claims 10-13 as well as claim 9.

At page 3 of the office action the Examiner indicates that claims 4 and 6 would be allowable if rewritten to overcome § 112 rejections and to include all of the limitations of their base claims. Applicants have rewritten claims 4 and 6 in independent form, to incorporate the limitations of their respective base claims and to remove all "means" recitations. Applicants believe that they have addressed each of the concerns of the Examiner, and request reconsideration and immediate allowance of claims 4 and 6.

Rejections under 35 USC § 112

At page 2 of the office action the Examiner has rejected claims 1-3, 5, 7, and 8 under 35 USC § 112. Applicants respectfully traverse. In their response to the office action entered herein 14 September 2001 applicants rewrote the claims to remove all means recitations. None of the claims contain any means recitation. Applicants believe that they have responded to each of the concerns of the Examiner, and respectfully request reconsideration and allowance of the claims.

Rejections under 35 USC § 102(b)

At page 2 of the office action the Examiner has rejected claims 1-3, 5, 7, and 8 under 35 U.S.C. § 102(b) as being anticipated by Ollila. Applicants have hereby rewritten claims 1 and 8, and respectfully traverse. Support for the rewriting of claims 1 and 8 is found at page 2, line 21, to page 3, line 12; page 3, line 23, to page 4, line 2; page 5, line 15, to page 7, line 7; page 7, line 13, to page 8, line 4; in Figure 2, and elsewhere throughout the specification.

Each of claims 1 – 3, 5, and 7, as presented, recites an electromagnetic drive within a compressor, wherein the control system supplies a pulse width modulated drive signal defining an alternating current (ac) waveform to the electromagnetic drive means so as to provide a predetermined pump flow rate. No such drive or control system is disclosed or suggested in the cited art. Applicants respectfully request reconsideration and allowance of the claims.

Claim 8, as presented, recites an electromagnetic drive within a compressor, wherein the control system supplies a pulse width modulated low voltage drive signal of substantially fixed amplitude to the electromagnetic drive, wherein the electromagnetic drive includes coils having alternating current, and wherein the pulse width modulated low voltage drive signal controls amplitude and repetition rate of the alternating current in the coils of the electromagnetic drive to drive an actuator of the compressor in order to generate a desired flow rate output from the compressor. No such drive or control system is disclosed or suggested in the cited art. Applicants respectfully request reconsideration and allowance of the claim.

### **CONCLUSION**

Applicants believe that they have fully responded to the Examiner's concerns and that each of the claims is in condition for immediate allowance. Applicants respectfully request reconsideration and immediate allowance of all the claims.

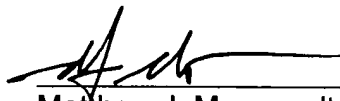
Applicants request that any questions concerning this matter be directed to the undersigned at (212) 895-2906.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted by facsimile to the Patent and Trademark

Office at the number identified above, in accordance with 37 CFR §1.6(d) and 1.8(b) on the date shown below.

Respectfully submitted,

Dated: 19 Aug 2002



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**REWRITTEN CLAIM PURSUANT TO 37 CFR 1.121(c)  
SHOWING REWRITTEN CLAIM 1 IN MARKED-UP FORM:**

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1. (Thrice rewritten) A fluid flow control system for an electromagnetic pump, the control system comprising:  
an electromagnetic drive within a compressor, wherein the control system supplies a pulse width modulated drive signal defining an alternating current (ac) waveform to the electromagnetic drive so as to provide a predetermined pump flow rate, wherein the drive signal is generated by a dc voltage supply.

**REWRITTEN CLAIM PURSUANT TO 37 CFR 1.121(c)  
SHOWING REWRITTEN CLAIM 3 IN MARKED-UP FORM:**

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3. (Twice rewritten) The fluid flow control system of claim 1, wherein the electromagnetic drive [means] includes at least one stator of magnetic material, at least one excitation winding for magnetically exciting the at least one stator, and a movable magnetic member connected to an actuator of the compressor.

**REWRITTEN CLAIM PURSUANT TO 37 CFR 1.121(c)  
SHOWING REWRITTEN CLAIM 4 IN MARKED-UP FORM:**

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4. (Twice rewritten) A fluid flow control system for an electromagnetic pump,  
the control system comprising:  
an electromagnetic drive within a compressor, wherein the control system  
supplies a pulse width modulated drive signal to the electromagnetic drive so as to  
provide a predetermined pump flow rate, wherein the drive signal is generated by a dc  
voltage supply; and [The fluid flow control system of claim 1, further comprising] at least  
one diaphragm, wherein the electromagnetic drive [means] is operatively associated  
with the at least one diaphragm to provide conversion of electrical energy to fluid flow.

**REWRITTEN CLAIM PURSUANT TO 37 CFR 1.121(c)  
SHOWING REWRITTEN CLAIM 6 IN MARKED-UP FORM:**

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6. (Twice rewritten) A fluid flow control system for an electromagnetic pump,  
the control system comprising:  
an electromagnetic drive within a compressor, wherein the control system  
supplies a pulse width modulated drive signal to the electromagnetic drive so as to  
provide a predetermined pump flow rate, wherein the drive signal is generated by a dc  
voltage supply, [The fluid flow control system of claim 1,] wherein the drive signal  
includes a mark-space ratio, and wherein the mark-space ratio of the drive signal  
defines over time an approximate half sine wave current waveform.

**REWRITTEN CLAIM PURSUANT TO 37 CFR 1.121(c)  
SHOWING REWRITTEN CLAIM 8 IN MARKED-UP FORM:**

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8. (Thrice rewritten) A fluid flow control system for an electromagnetic pump, the control system comprising;

an electromagnetic drive within a compressor, wherein the control system supplies a pulse width modulated low voltage drive signal of substantially fixed amplitude to the electromagnetic drive, wherein the electromagnetic drive includes coils having alternating current, and wherein the pulse width modulated low voltage drive signal controls amplitude and repetition rate of the alternating current in the coils of the electromagnetic drive to drive an actuator of the compressor in order to generate a desired flow rate output from the compressor.



**REWRITTEN CLAIM PURSUANT TO 37 CFR 1.121(c)  
SHOWING REWRITTEN CLAIM 10 IN MARKED-UP FORM:**

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10. (Twice rewritten) The fluid flow control system of claim [1]9, wherein the at least one sensor provides feedback to the command processor regarding instantaneous coil current.

**REWRITTEN CLAIM PURSUANT TO 37 CFR 1.121(c)  
SHOWING REWRITTEN CLAIM 11 IN MARKED-UP FORM:**

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11. (Twice rewritten) The fluid flow control system of claim [1]9, wherein the at least one sensor provides feedback to the command processor regarding actuator displacement.

**REWRITTEN CLAIM PURSUANT TO 37 CFR 1.121(c)  
SHOWING REWRITTEN CLAIM 12 IN MARKED-UP FORM:**

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12. (Twice rewritten) The fluid flow control system of claim [1]9, wherein the at least one sensor provides feedback to the command processor regarding bladder system pressure.

**REWRITTEN CLAIM PURSUANT TO 37 CFR 1.121(c)  
SHOWING REWRITTEN CLAIM 13 IN MARKED-UP FORM:**

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13. (Twice rewritten) The fluid flow control system of claim [1]9, wherein the at least one sensor provides feedback to the command processor regarding bladder system fluid flow.